

CLAIMS

What is claimed:

1. A method for modulating heme oxygenase level in cells of a transplant organ, comprising:
 - contacting cells of a transplant organ with a viral vector encoding a polypeptide having heme oxygenase activity, wherein said viral vector comprises a nucleic acid having at least 80% sequence identity to nucleotides 81-944 of the human heme oxygenase-I nucleic acid sequence of SEQ ID NO:1,
 - whereby the heme oxygenase level is increased.
2. The method of Claim 1, wherein said nucleic acid comprises nucleotides 81-944 of the human heme oxygenase-I nucleic acid sequence of SEQ ID NO:1.
3. The method of Claim 1, wherein said contacting is *ex vivo*.
4. The method of Claim 1, wherein said contacting is *in vivo*.
5. The method of Claim 1, wherein said organ transplant is an allograft.
6. The method of Claim 5, wherein said allograft is a heart.
7. The method of Claim 5, wherein said allograft is a liver.
8. The method of Claim 5, wherein said allograft is a kidney.
9. The method of Claim 1, wherein said contacting is prior to transplantation of said organ.
10. The method of Claim 1, wherein said contacting is subsequent to transplantation of said organ.
11. The method of Claim 1, wherein said contacting is by direct injection of said viral vector into said transplant organ.

12. A method for modulating heme oxygenase level in cells of an organ transplant, comprising:

contacting cells of an organ transplant with an adenoviral vector comprising a nucleic acid encoding a polypeptide with at least 80% amino acid sequence identity with the human heme oxygenase-I encoded by nucleotides 81-944 of the nucleic acid sequence of SEQ ID NO:1, wherein said polypeptide has heme-oxygenase activity, and

whereby levels of heme oxygenase is increased.

13. The method of Claim 12, wherein said polypeptide comprises human heme oxygenase encoded by nucleotides 81-944 of the nucleic acid of SEQ ID NO:1.

14. The method of Claim 12, wherein said contacting is *ex vivo*.

15. The method of Claim 12, wherein said contacting is *in vivo*.

16. The method of Claim 12, wherein said organ transplant is an allograft.

17. The method of Claim 16, wherein said allograft is a heart.

18. The method of Claim 16, wherein said allograft is a liver.

19. The method of Claim 16, wherein said allograft is a kidney.

20. The method of Claim 12, wherein said contacting is prior to transplantation of said organ.

21. The method of Claim 12, wherein said contacting is subsequent to transplantation of said organ.

22. The method of Claim 12, wherein said contacting is by direct injection of said viral vector into said organ.